REMARKS

Amendments

Claim 1 is amended recite that the frame is made of metal. See, for example, the disclosure at page 5, lines 5-7, page 5, lines 17-20, page 9, lines 3-5,and page 9, lines 8-10, which refer to welding, and page 8, lines 7-8. In addition, claim 1 is amended to recite that in each of the panels the frame is attached to the periphery of the sheet metal lining. See, for example, Figures 2 and 3. Similar amendments are made to claims 26 and 27.

Claims 11, 17, and 26 is amended to clarify the description of the U-sections that form the frame. See, e.g., the Figures. The text of claim 27 is rearranged so that the description regarding screwing the panels together is recited in the portion of the claim that deals with connecting the panels together.

New claims 29 and 30 are directed to further aspects of the invention and are supported throughout the disclosure. See, for example, page 4, lines 2-8, and the paragraph bridging pages 8-9.

Claims 2-5 and 7-28 are also amended to obviate the objections to the claims.

Objection to Claims 2-5 and 7-28

Claims 2-5 and 7-28 are objected to on grounds of lack of antecedent basis and the introductory article of the preamble of dependent claims. While applicants do not agree with all of these objections, the claims are amended in accordance with the Examiner's suggestions. Withdrawal of the objection is respectfully requested.

Rejection under 35 USC 103 in view of Guillard and Carren et al.

Claims 2-5, 7-9, 11-20, 22-24, and 26-28 are rejected as being obvious in view of Guillard (US 6,167,723) and Carren et al. (US 4,331,252). This rejection is respectfully traversed.

As can be seen in Figure 1, Guillard (US '723) discloses an air distillation installation that comprises a medium pressure column 2, a low pressure column 3, and a vaporizer-condenser 4. The vaporizer-condenser 4 provides heat exchange between a calorigenic gas

from the medium pressure column 2 and a liquid from the low pressure column 3. See column 1, lines 4-8 and Figure 1.

Referring again to Figure 1, the installation comprises a first erect structure 16 made up of the vaporizer-condenser 4 and the medium pressure column 2. Structure 16 is surrounded by a thermal insulation envelope 17 (shown in broken lines), which contains perlite, thus forming a cold box. The low pressure column 3 and a mixing column 5 form a second erect structure 19. This second structure 19 is surrounded by a thermal insulation envelope 21 (also shown in broken lines), which contains perlite, thus forming another cold box.

Guillard discloses that the cold boxes 17 and 21 are "prefabricated in the factory and then transported, erected and operatively connected at the work site, then filled with perlite to form the installation 1." See column 4, lines 64-67. These prefabricated cold boxes 17 and 21 include the thermal insulation envelopes and the elements that make up the first and second erect structures 16 and 19, except for the vaporizer-condenser 4. See column 5, lines 6-18.

Guillard provides no description of the elements of the thermal insulation envelopes or how they are constructed. Further, Guillard provides no suggestion that the envelopes are constructed from separate panels, made from a frame and sheet metal plates, as opposed to being constructed from an initial frame to which sheet metal plates are subsequently attached (compare the enclosure for housing a high or low temperature installation disclosed by GB 860,918, already of record).

The disclosure of Carren et al. (US '252) does not relate to an air distillation installation, as in the case of Guillard. Instead, the disclosure of Carren et al. relates to the construction of modular storage tanks for the containment of liquids at heights up to eight feet. In particular, Carren et al. disclose that their modular storage tanks are designed to safely contain large quantities of liquid for commercial purposes while minimizing the amount of material needed. Carren et al. state that their "technique" adapts known prior techniques used in swimming pool construction, and that their modular storage tank utilizes frame members that are "designed specifically to withstand the hydrostatic pressure of heights of say six to eight feet and moreover incorporates the use of cross tensioning members to counteract lateral pressure of the contained liquid." Further, Carren et al. state that "the structure which is

disclosed herein has been designed specifically with the concept of utilizing opposite counteracting forces of hydrostatic pressure and tension." See column 1, lines 25-60.

As shown in Figure 1, the modular storage tank of Carren et al. comprises panels and framing members that make up corner posts 11, sidewall posts 12, top rails 13, bottom rails 14, and intermediate rails 15. A corner post 11 is shown in Figure 2 and is formed by the joining together of two panels 19 and three L-shaped steel angles 16-18. A vertical end flange 19a of one of the panels 19 is sandwiched between steel angle 17 and steel angle 18. The vertical end flange 19a of the other panel 19 is sandwiched between steel angle 16 and steel angle 17. Then, steel angle 16 is bolted to steel angle 17 (with a vertical end flange 19 a there between), and steel angle 18 is bolted to steel angle 17 with a vertical end flange 19 a there between).

A side wall post 12 is illustrated in Figure 3 and is formed by the joining together of two panels 19 and two L-shaped steel angles 20-21. End flanges 19a of two adjacent panels 19 are sandwiched between the two L-shaped steel angles 20-21 which are arranged in the form of a "Z." Then, steel angles 20-21 are bolted together with the two end flanges 19a there between.

As shown in Figures 4-6, top rails 13 are positioned on top of each of the panels 19 and attached to steel angles 20-21 of the side wall posts via intermediate brackets 26. The top rails 13 are similarly attached to the corner posts 11 via intermediate brackets. See Figure 10. As shown in Figure 7, the bottom rails 34 and center rails 35 are similarly attached to the posts via intermediate brackets.

Thus, Careen et al. do not disclose forming a plurality of panels in which each panel comprises a frame and a sheet metal plate, and then connecting such panels together to form an enclosure. Instead, each of the panels disclosed by Careen et al. consists of a single steel wall panel 19. The steel angles 16-18, 20-21, 22, 23, 34, and 35 are used to connect the individual steel wall panels 19 together and in so doing form a frame. But, this frame does not exist before the steel wall panels 19 are connected together. As a result, Careen et al. clearly do not disclose or suggest connecting together panels, each of which already comprises a frame, so as to form an enclosure. Similarly, Careen et al. clearly do not disclose or suggest connecting forming panels that already comprise a frame before the panels are connected together.

Thus, contrary to the assertion in the rejection, Carren et al. do not disclose a process for producing an enclosure according to applicants' claims 1, 26 or 27. Even if one were to prepare an enclosure in accordance with the disclosure of Carren et al. for use in an installation according to Guillard, the resultant process would still not suggest a process in accordance with applicants' claimed invention.

In addition, the rejection presents no rationale as to why one skilled in the art would look to the disclosure of Carren et al. to produce a thermal insulation envelope for use in the installation of Guillard. The enclosure of Carren et al. is said to be designed for structures of up to 8 feet. This is significantly smaller than the size of the thermal insulation envelopes used in the installation of Guillard. Furthermore, Carren et al.'s enclosure is based on techniques used in the swimming pool construction, and is designed specifically to withstand certain levels of hydrostatic pressure and to utilize opposite counteracting forces of hydrostatic pressure and tension. There is nothing within the rejection that suggests why one skilled in the art of air distillation systems would look to an enclosure designed with these principles in mind when seeking to modify a cold box enclosure for distillation columns.

Additionally, as noted above, the cold boxes 17 and 21 of Guillard are "prefabricated in the factory" so that they can then be transported, erected and operatively connected at the work site, before being filled with perlite. In such a case, a modular construction as suggested by Carren et al. would be unnecessary.

The rejection also argues that the frames or flanges of Careen et al. are U-shaped. Applicants disagree. The frame of the Carren et al. enclosure is formed from steel angles all of which are L-shaped, such as angles 16-18. The highlighted region of Figure 1 of Careen et al. presented in the Office Action shows a "U-shaped" portion of the frame. This U-shaped structure is formed by three L-shaped steel angles which are positioned along three different edge regions of the steel wall panel, which has a total of four edge regions. Even under the Examiner's interpretation, the rejection does not indicate how this U-shaped section constitutes U-sections that run peripherally on four sides.

In the rejection, it is also argued that the flanges of Figures 7-8 also are U-shaped. Applicants disagree. As mentioned, the frame of the Carren et al. enclosure is formed from steel angles all of which are L-shaped, such as angles 16-18.

Moreover, none of the U-shaped structures suggested in the rejection are positioned

such that the legs of the U-sections each point towards the inside of the panel. Compare claim 13.

The rejection also asserts that elements 30 and 40 shown in the Figures of Carren et al. are diagonal braces. Firstly, while these structures are shown as being positioned at an angle to the perpendicular, this does not mean that there are **diagonal** with respect to any part of the panel. To be diagonal, the structure must line along the diagonal of at least a section of the panel. Furthermore, structures 30 and 40 are cable mounting posts. They do not brace any portion of the structure.

In addition, the weld points of cable mounting posts 30 and 40 are not positioned at any contact point between two panels. See for example Figure 6 which shows a post welded to flange 20a of steel angle 20. Thus, the welding of cable mounting posts 30 and 40 does not seal contact points between adjacent panels 19 so as to make the enclosure gas-tight.

It is also asserted in the rejection that the frame of Carren et al. is provided with vertical stiffeners, referring to reference numeral 17. However, steel angle 17 of Carren et al. is part of the frame itself, not a stiffener for the frame. Steel angle 17 forms part of the means used to connect two panels 19 at a corner of the enclosure. Without steel angle 17, there is no corner post. Thus, steel angle 17 is a necessary part of the frame without which the frame would be incomplete. It is not a separate stiffener for the frame.

In view of the above remarks, it is respectfully submitted that the disclosure of Guillard, taken alone or in combination with the disclosure of Carren et al., fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103 in view of Guillard, Carren et al., and Bracque et al.

Claims 10, 21, and 25 are rejected as being obvious in view of Guillard (US 6,167,723), Carren et al. (US 4,331,252), and Bracque et al. (US 5,461,871). This rejection is respectfully traversed.

The disclosures of Guillard and Carren et al. are discussed above. Bracque et al. an air distillation installation which, as shown in Figure 1, comprises a double column 5, having a medium press column and a low pressure column, disposed within an insulation cylindrical wall 32 which is under vacuum. Cylindrical wall 32 is provided with connections 33 that

correspond to couplings 30 from a cold module 4. See column 3, lines 7-37.

However, the disclosure of Bracque et al. does not overcome the deficiencies discussed above in the combined disclosure of Guillard and Carren et al.

In view of the above remarks, it is respectfully submitted that the disclosure of Guillard, taken alone or in combination with the disclosure of Carren et al. and/or Bracque et al., fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103 in view of Guillard and Nystrom

Claims 2-5, 7-9, 11-20, 22-24, and 26-28 are rejected as being obvious in view of Guillard (US 6,167,723) and Nystrom (US 2,231,216). This rejection is respectfully traversed.

The disclosure of Guillard is discussed above. Nystrom disclose an insulation panel. As shown in Figures 1-2, the insulation panel 12 comprises two walls 10 and 11, i.e. metallic sheets that are spaced from one another. These sheets are provided with corrugations 22 and 23 to increase stiffness. Metallic sheets 10 and 11 have at their edges flanges 12-13, respectively, that extend completely around the panel 12. The panels further contain insulating members 14 made out of material with low thermal conductivity to reduce heat conductivity between sheets 10 and 11. See column 1, lines 1-4 and 11-14.

Additionally, two sheets 15 and 16 are positioned within the panel between metallic sheets 10 and 11. These sheets may be perforated 24 to reduce weight. Sheets 15 and 16 are also provided with flanges 17-18 at their edges. Flange 17 of sheet 15 is attached to flange 12 of sheet 10 by fastening means (such as bolts 19) that pass through insulating members 14. Similarly, flange 18 of sheet 16 is attached to flange 13 of sheet 11 by fastening means (such as bolts 19) that pass through insulating members 14. Sheets 15 and 16 are spaced apart from one another within the region defined between plates 10 and 11. In the space between sheets 15 and 16 there insulation material 20 is provided.

Nystrom discloses that his panels can be used a "hatch plug" for closing hatches and doorways of refrigerated cars. Nystrom further discloses that the panels can be used for the floor, walls, or roof of refrigerated cars. See column 1, lines 1-11. The disclosure of Nystrom does not relate to enclosures for large structures, such as an air distillation

installation as in the case of Guillard.

In the rejection, it is argued that Nystrom disclose an enclosure having panels wherein each panel comprises a frame and a sheet metal lining. With respect to the sheet metal lining, the rejection refers to the sheets 10, 11, 15, and 16 in Figure 1. However, with regards to the frame, the rejection merely states "at least flanges." The flanges 12 and 13 are part of the metallic sheets 10 and 11, not a frame. Similarly, the flanges 17 and 18 are part of the metallic sheets 15 and 16, not a frame. In the panels of Nystrom, the only structural elements that could arguably be considered to make up a frame are the insulating members 14 which made out of material with low thermal conductivity such as wood or fiber.

In either case, neither the flanges 12, 13, 17, and 18, nor the insulating members 14 constitute a metal frame attached the periphery of any of metal sheets 10, 11, 15, and 16. The 12, 13, 17, and 18 are the periphery of metal sheets 10, 11, 15, and 16, and insulating members 14 are not made of metal. In fact, the insulating members 14 function to separate the peripheries of metal sheets 10 and 11 to reduce heat conductivity between these sheets.

Thus, contrary to the assertion in the rejection, Nystrom does not disclose a process for producing an enclosure according to applicants' claims 1, 26 or 27. Even if one were to prepare an enclosure using the panels disclosed by Nystrom for use in an installation according to Guillard, the resultant process would still not suggest a process in accordance with applicants' claimed invention.

In addition, the rejection presents no rationale as to why one skilled in the art would look to the disclosure of Nystrom, directed to railroad cars, to produce a thermal insulation envelope for use in the much larger air distillation installation as disclosed by Guillard.

Additionally, as noted above, the cold boxes 17 and 21 of Guillard are "prefabricated in the factory" so that they can then be transported, erected and operatively connected at the work site, before being filled with perlite. In such a case, manufacturing individual panels based on the disclosure of Nystrom as suggested in the rejection would be unnecessary.

The rejection further argues that Nystrom discloses a frame for the panel that has U-shaped sections, citing the flanges of the metallic sheets. However, as noted above, the flanges are part of the sheets, not a frame. Furthermore, the flanges are not U-shaped, but instead are flat structures. The U-shaped structure alluded to in the rejection is the entire metallic sheet. As noted above, the rejection already relies on the metallic sheets as

presenting the sheet metal lining.

Moreover, the U-shaped structures suggested in the rejection are not positioned such that the legs of the U-sections each point towards the inside of the panel. Compare claim 13.

Additionally, the rejection asserts that the panel of Nystrom has diagonal braces, pointing to the inclined surfaces forming the corrugations 22 and 23 of metallic sheets 10 and 11. However, these inclined surfaces are not **diagonal** braces. To be diagonal, the structure must line along the diagonal of at least a section of the panel.

The rejection further argues that the bolts 19 of the panels of Nystrom are welded. Specifically, at column 2, lines 10-12, Nystrom states that the "nuts 25 which engage the bolts 19 should be welded to the flanges 17-18 to facilitate assembly." This means that the nuts are welded in place so that they do not move during assembly. Thus, there is no need to use a wrench to hold them in place, thereby facilitating assembly.

The weld points of the nuts 25 are not positioned at any contact point between two **panels**, or even at a contact point between two of the metallic sheets of the Nystrom panel. In fact, Nystrom provides no details or suggestion as to how to attach two panels together. The welding of nuts 25 does not seal contact points between adjacent panels so as to make an enclosure formed there from gas-tight.

The rejection also asserts that the panel of Nystrom is reinforced with vertically arranged sections, citing element 14. However, as noted above insulating members 14 actually form the frame of the panel of Nystrom. They are not additional vertically arrange sections used to reinforce the frame.

In view of the above remarks, it is respectfully submitted that the disclosure of Guillard, taken alone or in combination with the disclosure of Nystrom, fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

Rejection under 35 USC 103 in view of Guillard, Nystrom, and Bracque et al.

Claims 10, 21, and 25 are rejected as being obvious in view of Guillard (US 6,167,723), Nystrom (US 2,231,216), and Bracque et al. (US 5,461,871). This rejection is respectfully traversed.

The disclosures of Guillard, Nystrom, and Bracque et al. are discussed above. The

disclosure of Bracque et al. does not overcome the deficiencies discussed above in the combined disclosure of Guillard and Nystrom.

In view of the above remarks, it is respectfully submitted that the disclosure of Guillard, taken alone or in combination with the disclosure of Nystrom and/or Bracque et al., fails to render obvious applicants' claimed invention. Withdrawal of the rejection is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,

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